SMART DIESEL PARTICULATE MONITORING SOLUTIONS

The Ultimate Real-Time Portable DPM Monitors

Designed for Portable Background DPM Monitoring

TSI'S REAL-TIME PORTABLE DIESEL PARTICULATE MONITORS ARE SIMPLY THE SMARTEST AND MOST TECHNICALLY ADVANCED INSTRUMENTS OF THEIR TYPE. UNLIKE OTHER COMPETITIVE INSTRUMENTS, TSI DPM MONITORS ARE PRECISELY CALIBRATED AND OPTIMIZED FOR DPM MEASUREMENTS. AT THE PRESS OF A BUTTON ON THE COLOUR TOUCH SCREEN, THEY CAN EVEN BE SWITCHED INTO DUST MONITORING MODE, PROVIDING HIGHLY ACCURATE & RELIABLE DUST MEASUREMENTS.

With superior optics and particle detection system, TSI's portable DPM monitors offer accuracy and resolution down to **1ug/m3** versus 100ug/m3 or worse on some competitive products. That is a factor of 100 times better resolution when compared to some competitive instruments.

TSI's 8534-DPM represents the very latest technology with all **digital** signal processing and a USB interface instead of the RS232 interface still found on some competitive products. The 8534-DPM also provides real-time statistics, an outlet port for isokinetic sampling applications, on screen instrument monitoring indicators, and a long life pump. The 8534-DPM represents rock solid and constantly evolving technology. It is simply the smartest investment for any organisation undertaking portable diesel particulate measurements.

Another great feature of the 8534-DPM is the built-in 60,000 point data logger, which allows clients to log and later view or print out test results. The 8534-DPM also features a large 3.5" touch screen graphical VGA color display, variable flow rate (up to 3 lpm) for better particle transport, up to 6 hour battery run time off the internal rechargeable lithium ion battery and many other popular features.

Proper **calibration** of any optical electronic device of this type is absolutely paramount to ensure accurate, reliable & repeatable measurements. Kenelec Scientific has decades of experience with optical electronic particle counting and sizing instruments. With advanced service facilities and full **NATA** & **ISO21501** accreditation in the calibration of optical particle counting / sizing instruments, no other company comes close to matching the experience and capabilities that Kenelec Scientific offers in Australasia.

Checking flow rates or using zero filters in the field is not enough. In following global standards, all instruments of this nature need to be calibrated on an annual basis in the laboratory by experienced optical electronic technicians. Unlike some competitive companies that send equipment overseas for repairs or calibrations or do sub standard calibrations / verifications in the field, Kenelec Scientific sells, services, fully calibrates and **supports** all of our systems and instruments locally in Australia to the highest possible standards.

TSI 8534-DPM PORTABLE DPM MONITOR

Standard Features Include

- 100nm to 1000nm particle size range (15um with inlet removed)
- Real-time on screen results to instantly inform users
- Outlet port for isokinetic sampling applications
- 0.001 to 150mg/m3 wide particle concentration range
- Fully compliant with both **AIOH** & **MDG29** Australian guidelines
- Uses the latest 90 degree light scattering technology
- **0.001 mg/m3** high resolution measurements
- Built-in pump, 3 lpm flow rate, (variable from 1.4 to 3 lpm)
- 3 lpm flow rate provides better particle transport
- 60,000 point data storage (once a minute for 45 days)
- 3.5 inch real-time VGA colour graphical touch screen display
- Fully menu driven and easy to use
- Excellent correlation with laboratory reference instruments
- Patented sheath air system & recessed optics
- Made in the USA by world renowned TSI Incorporated

Enhanced Features Include

- Both audible & visual alarms to instantly alert users
- Provides 8 hour TWA data or data over any work shift
- Can be used as a highly accurate real-time DPM monitor or highly accurate dust monitor (2 instruments for the price of one)
- No impactors included, measures PM1, PM2.5, PM4, PM10 and total PM fractions simultaneously in real-time
- Easy zero check to validate field measurements
- Operates for 6 hours off 1 internal battery
- Smart battery technology for optimizing battery life
- 240 volt mains powered or powered from 12 volts DC
- Includes powerful Windows based analysis software
- Rugged construction for reliability in the field
- Field adjustable calibration factor adjustments / capabilities
- Optional SMS & Email messaging & remote telemetry

Service, Support & Calibration

- Fully serviced and supported in Australia by Kenelec Scientific
- Fully calibrated both optically and electronically to **ISO12103-1** international standards by Kenelec Scientific
- Kenelec Scientific is Australia's leading **NATA** accredited and fully **ISO21501** compliant NATA calibration laboratory
- Lifetime FREE technical support, rental options available
- Lifetime FREE firmware and software updates

Kenelec Scientific

SMART DIESEL PARTICULATE MONITORING SOLUTIONS

The Ultimate Real-Time Personal DPM Monitors

Modularity & Expandability
Use your 8534-DPM as a portable handheld meter to track down DPM sources and monitor background levels. Store data on a USB stick, log to internal memory or connect it to your local SCADA system or other telemetry devices using the serial / USB interface. Calibration factors can be stored in the device and easily selected (switched between) allowing the user to accurately measure diesel, dust and other potentially deadly aerosols.

Smart Messaging & Telemetry Options
The 8534-DPM utilizing optional components is even capable of sending SMS and email messages to mobile devices and PC's (via the internet) on DPM alarm alerts. It can also transmit valuable measurement data back to mobile devices and PCs via the internet for remote data storage and analysis. Network connections include 3G / NEXTG mobile, underground mesh and others.

Constantly Evolving Technology
Innovative design, free updates, numerous add ons, plug-ins and accessories available

Communications
- USB 2 interface for PC connection and manual data download
- Data dump straight to any USB flash drive
- Field programmable firmware updates (all models)
- USB to RS232 converter available for users needing RS232

Outputs & Alarms
- Internal audible & visual alarms to warn users
- 0 to 5 VDC or 4-20mA outputs (not available on this model)
- Fully user selectable scaling range (not available on this model)
- Relay contact closure (not available on this model)
- Local warning lights and sirens available (optional)
- SMS messaging on alarms (optional)

Telemetry & Data Access Options
- Manual download using any USB flash drive
- 3G / NEXTG mobile network data access capabilities (optional)
- Underground mesh network back to base capabilities (optional)
- SMS & Email messaging capabilities (optional)
- Full data access using internet & web browser (optional)
- Internet data collection plans available from only $20 per month

SPECIFICATIONS

General Information

Physical

Case	Rugged ABS plastic
Dimensions	12.5 x 12.1 x 31.6cm
Weight	1.5kg with battery installed

Internal Battery System
Operates off 1 x 3600mA lithium ion battery for approximately 6 hours. The typical charging time inside the device or using the charger is approximately 4 hours.

Sampling Conditions
May be used for normal ambient air DPM measurements up to typically 50 deg C and with humidity up to 95% in an ideally non condensing environment.

TWA & Shift Sampling
Provides valuable data logging and 8 hour TWA measurements along with the ability to monitor over specific work shift periods.

Measurement Device

Primary Sensing Device
TSI 8534-DPM new generation laser photometer with patented sheath air system and recessed optics

Sensor Type
90° light scattering

Particle Size Range (Dust Mode)
0.1um to 15 µm

Particle Size Range (DPM Mode)
0.1um to 1um

Flow Rate
3.0 L/min set at factory, 1.40 to 3.0 L/min, user adjustable

Flow Accuracy
±5% of factory set point, fully internal flow controlled

Particle Concentration Range
0.001 to 150mg/m3 (elemental carbon)

Measurement Resolution
±0.1% of reading or 0.001 mg/m3, whichever is greater

Zero Stability
±0.002 mg/m3 per 24 hours at 10 sec time constant

Temperature Coefficient
+0.001 mg/m3 per °C

Display
3.5" VGA colour touch screen

Primary Data Storage
5MB of onboard memory (60,000 data points) providing logging once a minute for 45 days.

Secondary Data Storage
Up to 64GB data storage for units fitted with companion data loggers for SMS and remote data access

Logging Interval
1 second to 1 hour, user adjustable

Time Constant
1 second to 60 seconds

Humidity Range
0 to 95% operational humidity range with the unit ideally not used in condensing environments

Temperature Range
0 to 50 deg C operational temperature range and -20 to 60 deg C storage temperature range

Size Selective Inlets
No inlets are supplied with this model as it simultaneously measures 5 particulate matter size fractions (PM1, PM2.5, PM4, PM10 and total PM.

Sheath Air System
Patended sheath air system and recessed optics to keep the optics clean during sampling

Power Requirements
Operates off a single 3600mA lithium ion re-chargeable battery as well as 12 volts DC and / or a 240v AC adapter which is supplied with the device.

CE Rating
Immunity EN61236-1:2006
Emissions EN61236-1:2006

Included Components
8534-DPM portable monitor
1 x 3600mA internal battery
240 volt battery charger
Carry case
Zero filter / checker
General accessories
User manual & calibration certificate
Software & PC interface cable
Full 2 year warranty

Options & Accessories
Spare 3600mA internal battery
SMS & email messaging kit
Web based data collection kit
Internal shealth air filters
Solar power system
$20 per month web hosting of data
Annual maintenance contract
Annual clean & calibration

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